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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,323	12/28/2001	Marcia Reid Martin	2001-057-SFT	8893

7590 10/18/2006

STORAGE TECHNOLOGY CORPORATION
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EXAMINER	
PARTHASARATHY, PRAMILA	

ART UNIT	PAPER NUMBER
2136	

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/034,323	MARTIN ET AL.	
	Examiner	Art Unit	
	Pramila Parthasarathy	2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) *1-27* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. In view of the Pre-Appeal Brief request filed on 7/17/2006, PROSECUTION IS HEREBY REOPENED. Applicant's arguments with respect to claims 28 – 40 have been considered but are moot in view of the new ground(s) of rejection as set forth below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 28 – 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims recite "constraint" but fail to point out what that constraint qualifies to or what are the conditions to satisfies that constraint.

3. Examiner broadly interprets "constraint" as timed backups and suggests amending the claims to clearly disclose the claimed subject matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 28 – 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brunnett et al. (U.S. Patent Number 6,792,517) in view of Sweet et al. (U.S. Patent Number 6,058,372).

5. Regarding Claim 28, Brunnett teaches creating a sequence of mirrors-in-the-middle, each mirror-in-the-middle including a copy of data stored on the primary storage system at a fixed point in time (Brunnett Summary and Column 3 lines 35 – 53);

checking a first mirror-in-the-middle of the sequence of mirrors-in-the-middle to see if a copy of data stored on the first mirror-in-the-middle satisfies at least one constraint (Brunnett Summary and Column 3 lines 35 – 53); and

if not, repeating checking previous mirrors-in-the-middle in the sequence of mirrors-in-the-middle until one of the checked previous mirrors-in-the-middle include an uncorrupted copy of data satisfying the at least one constraint (Brunnett Summary and Column 3 lines 35 – 53).

Brunnett discloses mirroring the backup data to a firmware (a copy of data stored on the firmware) wherein if the data is damaged, the firmware can either copy data back to the primary memory or the backup (secondary) memory can copy data back to the primary memory. Brunnett further discloses that even when the primary memory is damaged (corrupted/virus data), a complete mirror image of the primary disk will be maintained in the backup and firmware portions (Brunnett Summary and Column 5 lines 13 – 47). Brunnett does not explicitly disclose if a copy of data stored in the first mirror does not satisfies at least one constraint, repeating checking previous mirrors-in-the-middle (backup storage, firmware) until one of the checked previous mirror-in-the-middle include an uncorrupted copy of data satisfying the at least one constraint. However, Sweet teaches if a copy of data stored in the first mirror does not satisfies at least one constraint, repeating checking previous mirrors-in-the-middle (backup storage, firmware) until one of the checked previous mirror-in-the-middle include an uncorrupted copy of data satisfying the at least one constraint (Sweet Column 5 line 30 – Column 6 line 52).

Motivation to combine the invention of Sweet with Brunnett's teachings comes from the need for secure and protect the data from any types of corruption. Brunnett themselves provide a discussion of the need for protecting the data in both primary and backup storage devices but are silent as to the specific details of the repeated checking involved. It would have been obvious to one of ordinary skill in the art to coming Sweet with Brunnett because security and protection is needed for both backup and primary

portions of memory and Sweet provides some details of how to protect the data and secure backup storage devices.

Furthermore, the applicant has not explicitly claimed what that constraint criteria will be and that the constraint is heart of the invention. If the applicant has the special constraint in the invention then the examiner suggests amending the claims to explicitly recite such a constraint.

A recitation directed to the manner in which a claimed apparatus is intended to be used does not distinguish the claimed apparatus from the prior art if prior art has the capability to do so perform (See MPEP 2114 and Ex Parte Masham, 2 USPQ2d 1647 (1987)). The prior art is replete with references disclosing backing up data that will be used to copy back to primary location (See PTO 892).

6. Regarding Claim 35, Brunnett teaches a random-access storage unit storing a sequence of mirrors-in-the-middle, each mirror-in-the-middle including a copy of data stored on the primary storage system at a fixed point in time (Brunnett Summary and Column 3 lines 35 – 53); and

control logic in communication with the random-access storage unit, the control logic operating to checking a first mirror-in-the-middle of the sequence of mirrors-in-the-middle to see if a copy of data stored on the first mirror-in-the-middle satisfies at least one constraint, and if not, repeating checking previous mirrors-in-the-middle in the

sequence of mirrors-in-the-middle until one of the checked previous mirrors-in-the-middle include an uncorrupted copy of data satisfying the at least one constraint (Brunnett Summary and Column 3 lines 35 – 53).

Brunnett discloses mirroring the backup data to a firmware (a copy of data stored on the firmware) wherein if the data is damaged, the firmware can either copy data back to the primary memory or the backup (secondary) memory can copy data back to the primary memory. Brunnett further discloses that even when the primary memory is damaged (corrupted/virus data), a complete mirror image of the primary disk will be maintained in the backup and firmware portions (Brunnett Summary and Column 5 lines 13 – 47). Brunnett does not explicitly disclose if a copy of data stored in the first mirror does not satisfies at least one constraint, repeating checking previous mirrors-in-the-middle (backup storage, firmware) until one of the checked previous mirror-in-the-middle include an uncorrupted copy of data satisfying the at least one constraint. However, Sweet teaches if a copy of data stored in the first mirror does not satisfies at least one constraint, repeating checking previous mirrors-in-the-middle (backup storage, firmware) until one of the checked previous mirror-in-the-middle include an uncorrupted copy of data satisfying the at least one constraint (Sweet Column 5 line 30 – Column 6 line 52).

Motivation to combine the invention of Sweet with Brunnett's teachings comes from the need for secure and protect the data from any types of corruption. Brunnett themselves provide a discussion of the need for protecting the data in both primary and backup storage devices but are silent as to the specific details of the repeated checking

involved. It would have been obvious to one of ordinary skill in the art to coming Sweet with Brunnett because security and protection is needed for both backup and primary portions of memory and Sweet provides some details of how to protect the data and secure backup storage devices.

Furthermore, the applicant has not explicitly claimed what that constraint criteria will be and that the constraint is heart of the invention. If the applicant has the special constraint in the invention then the examiner suggests amending the claims to explicitly recite such a constraint.

A recitation directed to the manner in which a claimed apparatus is intended to be used does not distinguish the claimed apparatus from the prior art if prior art has the capability to do so perform (See MPEP 2114 and Ex Parte Masham, 2 USPQ2d 1647 (1987)). The prior art is replete with references disclosing backing up data that will be used to copy back to primary location (See PTO 892).

7. Claims 29 and 36 are rejected as applied above in rejecting claims 28 and 35. Furthermore, Brunnett teaches restoring the uncorrupted copy of data to the primary storage system (Summary; Column 3 lines 35 – 53 and Column 4 line 58 – Column 7 line 4).

8. Claims 30 and 37 are rejected as applied above in rejecting claims 28 and 35. Furthermore, Brunnett teaches checking comprises scanning for viruses (Summary; Column 3 lines 35 – 53 and Column 4 line 58 – Column 7 line 4).

9. Claims 31 and 38 are rejected as applied above in rejecting claims 28 and 35. Furthermore, Brunnett teaches monitoring a database for consistency of constraints (Summary; Column 3 lines 35 – 53 and Column 4 line 58 – Column 7 line 4).

10. Claim 32 is rejected as applied above in rejecting claim 28. Furthermore, Brunnett teaches storing the sequence of mirrors-in-the-middle using a data management appliance (Summary; Column 3 lines 35 – 53 and Column 4 line 58 – Column 7 line 4).

11. Claims 33 and 39 are rejected as applied above in rejecting claims 28 and 35. Furthermore, Brunnett teaches restoring the copy of data stored on the first mirror-in-the-middle to the primary storage system if the copy of data stored on the first mirror-in-the-middle satisfies the at least one constraint (Summary; Column 3 lines 35 – 53 and Column 4 line 58 – Column 7 line 4).

12. Claims 34 and 40 are rejected as applied above in rejecting claims 28 and 35. Furthermore, Brunnett teaches checking a copy of data stored on the first mirror-in-the-middle satisfies the at least one constraint, checking a copy of data stored on at least

one additional mirror-in-the-middle later in the sequence of mirrors-in-the-middle than the first mirror-in-the-middle satisfies the at least one constraint (Summary; Column 3 lines 35 – 53 and Column 4 line 58 – Column 7 line 4).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pramila Parthasarathy whose telephone number is 571-272-3866. The examiner can normally be reached on 8:00a.m. To 5:00p.m.. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami can be reached on 571-232-4195. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR only. For more information about the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pramila Parthasarathy
October 16, 2006.

NASSER MOAZZAMI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

10/16/06